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ABSTRACT

The term "cluster analysis" refers to a set of statistical methods that classify entities with similar profiles of scores on a number of measured dimensions, in order to create empirically based typologies. A 1980 Minnesota House Research Report employed cluster analysis to categorize school districts according to their relative mixtures of property valuation. This report updates that analysis using 1984 property assessment data to show how major changes in property valuations during the past few years have resulted in unequal changes in property valuation profiles among school districts, resulting in changes in the empirically based typology of districts. Based on the analysis, Minnesota's 435 school districts were classified into eight clusters, which are profiled in the report. Appended are a set of tables showing statistics for these school district clusters based on estimated market value, followed by an ordered listing of school districts with cluster identification. (TE)

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CLUSTER ANALYSIS OF MINNESOTA SCHOOL DISTRICTS

A Research Report

August 1986

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CLUSTER ANALYSIS OF

MINNESOTA SCHOOL DISTRICTS

A Research Report

August 1986

The purpose of this research is to create a classification of Minnesota school districts based on their property valuation profiles.

This report was written by JAMES CLEARY, Senior Research Methodologist, who also did the programming and analysis. MOHAMED ELDEEB, Systems Manager, prepared the data bases, and ALAN HOPEMAN and KAREN BAKER, Legislative Analysts, assisted with the interpretation of the findings.

Questions concerning this report should be directed to ALAN HOPEMAN (296-7434) or JAMES CLEARY (296-5053).

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INTRODUCTION

The term **cluster analysis** refers to a set of statistical methods which classify entities with similar profiles of scores on a number of measured dimensions, such that entities with similar score profiles are placed into the same group, and those with different score profiles are placed into different groups. Thus, cluster analysis is a tool for creating empirically based classifications or typologies.[1]

The 1980 House Research Report entitled Property Tax Equalization In Minnesota: A Review of the Sales Ratio Study employed cluster analysis to categorize school districts according to their relative mixtures of property valuation.[2] The resulting typology of school districts were used to help analyze the impacts of the proposed methodological changes to the Sales Ratio Study, and it has since proved useful in other legislative and departmental analyses.

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[1] Although cluster analysis was originally proposed in the 1930's, the procedure was not widely used until the 1960's when the widespread availability of computers made the extensive calculations relatively easy. Sokal and Sneath's (1963) book on numerical taxonomy in biology is generally regarded as the seminal work in the area of cluster analysis. Since then, cluster analysis has been widely used in fields such as zoology, biology, botany, bacteriology, psychiatry, sociology, library science, geography and statistics.

During the past two decades of its popularity, well over 100 different clustering methods have been developed. These methods have been reviewed by Anderberg (1973), Bailey (1974), Cormack (1971), Everitt (1974) and Blashfield (1976). The different methods often yield different results, and there is no consensus on which particular method is most useful or most accurate. Generally speaking, the choice of method depends on the purpose of the analysis, the features of the data involved, and the availability of a computer program to perform the calculations.

[2] The basis for comparing school districts was their percentage of indicated market valuation in each of eight property use classes: residential-apartment, seasonal-recreational, timber, farm, commercial-industrial, personal, public utility and mineral. Indicated market value is obtained by adjusting (i.e., dividing) the estimated market value for a property use class by the corresponding sales ratio.

The purpose of this report is to update that analysis using 1984 (Payable 1985) property assessment data.[3] One would expect that the major changes in property valuations during the past few years would have resulted in unequal changes in property valuation profiles among school districts, resulting in changes in the empirically based typology of districts; this is confirmed by the results presented in this report.

Not only have there been some changes in the membership of the various clusters, but the cluster structure itself has changed somewhat, particularly for urban districts where there is no longer a clear distinction between the bedroom communities and the more commercial cities. In addition, we have created, on an a priori[4] basis, a separate cluster for school districts receiving taconite aid, since that distinction is useful in much school finance analysis.

It is hoped that by updating this cluster analysis, this classification of school districts will continue to be a useful conceptual tool for policymakers, administrators and researchers.

CLUSTERING METHODOLOGY

The entities clustered consist of 414 of Minnesota's 435 school districts. The remaining 21 school districts were classified a priori into a separate group since they are distinct in receiving taconite aid and, thus, are frequently regarded as a distinct group by school finance decisionmakers. These 21 districts appear as Cluster 8 in subsequent presentations of results.

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[3] Obviously, property valuation is not the only possible basis for grouping school districts. School districts could be clustered on the basis of a wide variety of other empirical characteristics, such as demographic factors, course offerings, fiscal information, and so on. The only requirement is that the chosen measures should be relevant to the applications for the resulting typology.

[4] In this context, the term, a priori, means that the class was created on a purely logical basis and without the application of any statistical procedures.

The measurements used for this analysis consist of each district's percentage of estimated market valuation in each of 5 property use classes: residential-apartment, commercial-industrial, farm, seasonal-recreational and public utility.[5] Personal property, mineral and timber property valuation were not considered in the final analysis since preliminary analysis revealed that they tend to obscure rather than clarify the resulting classification of school districts. Accordingly, the percentage distributions for each district sum to 100% across the 5 property use classes considered.[6]

The clustering method used in this analysis was the convergent k-means method.[7] As with other nonhierarchical clustering methods, this method requires the analyst to make a judgement regarding the appropriate number of clusters and to provide a starting profile or seed point for each hypothesized cluster. The choice of seed points has little bearing on the final results, though a good choice hastens the clustering process. The program calculates the squared euclidean distance of the first district's profile from each seed point and assigns the district to the cluster to which it is closest (i.e., most similar). The cluster's centroid (i.e., average score profile) is recalculated after each assignment, and the program proceeds to evaluate and assign the next school district. After the last district is assigned, the program

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[5] Railroad operating property value was included in the commercial-industrial use class. Vacant land value was included in the residential-apartment use class in cities, and in the farm use class in townships.

[6] Subsequent to the analysis reported herein, the analysis was replicated using z-score transformations of these percentage distributions (where z equals the deviation of a percentage score from the mean for that variable, divided by its standard deviation). Such a transformation equalizes the relative contribution of each variable to the computed distance between the score profiles of districts. Accordingly, variables with less variance (i.e., public utility, commercial-industrial and seasonal) would have the same weighting as variables with considerably more variance (i.e., residential-apartment and farm) and, thus, would contribute equally to the outcome of the analysis. However, use of the transformed data tended to obscure the results, so that analysis is not presented.

[7] The convergent k-means method, proposed by Anderberg, is a variation on the MacQueen's k-means method of nonhierarchical cluster analysis (see Anderberg, 1973: 163).

loops back through the school district data base, reassigning districts and recalculating cluster centroids until no more changes are possible, i.e., until convergence occurs. The final solution is that partitioning of school districts which has the smallest within-group variance for the given number of clusters.

RESULTS OF THE ANALYSIS

Based on a general familiarity with Minnesota's school districts and on the findings of our earlier cluster analysis, exploratory analyses were performed using 9, 8, 7 and 6-cluster solutions. In each analysis and for each hypothesized cluster, the valuation score profile of an actual district was used as a seed point to start the analysis.

The optimal classification is the 8-cluster solution summarized in Figure 1. Clusters 1-7 were produced by the clustering algorithm, while cluster 8 was defined a priori as consisting of the 21 school districts receiving taconite aid. Each cluster in Figure 1 is represented by its unique profile of scores on the 5 variables used in the analysis. Each score in a profile represents the average of the proportions of the corresponding property type for the districts contained in that cluster. For example, the 185 districts in cluster 1 have, on the average, 10.2% of their valuation in residential-apartment property, 1.9% in commercial-industrial property, 87% in farm property, 0.3% in seasonal-recreational property, and 0.5% in public utility property.[8]

A successful cluster analysis will result in clusters with fairly distinct score profiles, which enables the analyst to descriptively name the clusters for easy reference. Names have been assigned to clusters on the basis of the high points of their profiles. Thus, the first cluster,

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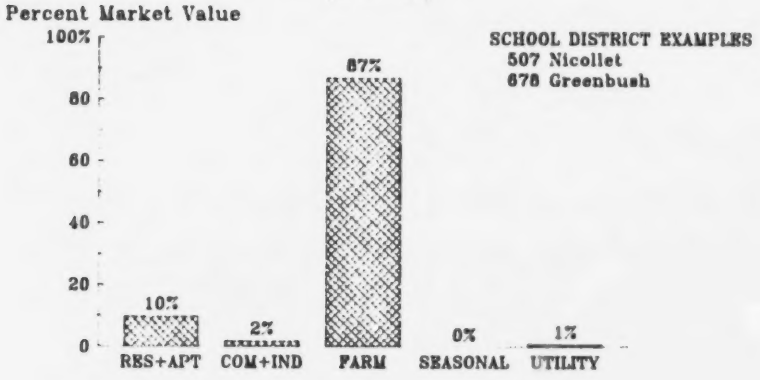
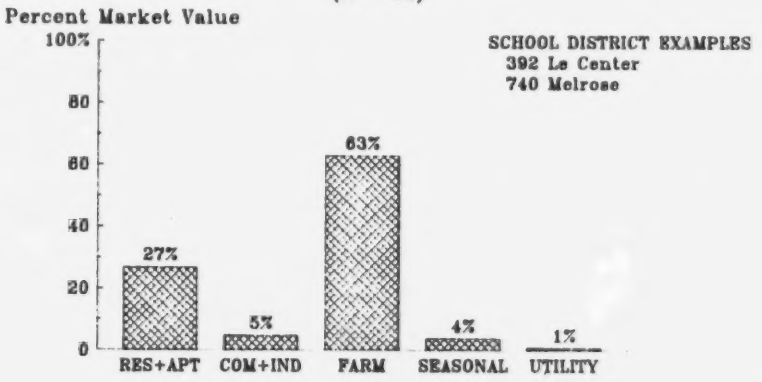
[8] The reader will recall that personal, timber and mineral valuation were excluded from the analysis.

FIGURE 1
SCHOOL DISTRICT CLUSTER PROFILES

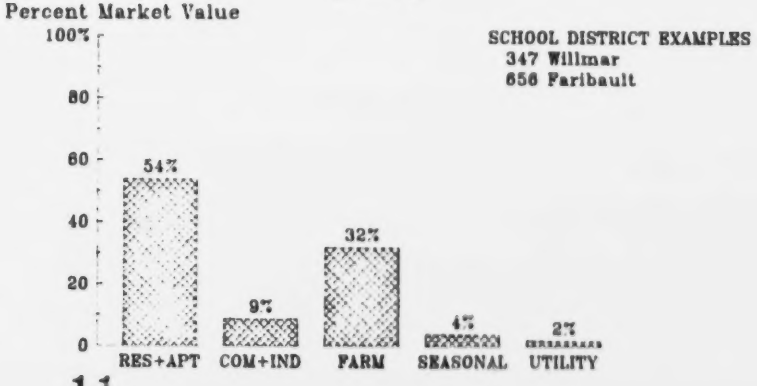
CLUSTER 1
RURAL FARM DISTRICTS
(N = 185)



CLUSTER 2
FARM TOWN DISTRICTS
(N = 99)



CLUSTER 3
FARM REGIONAL CENTER DISTRICTS
(N = 41)



CLUSTER 4
FARM–SEASONAL–REC DISTRICTS
(N = 24)

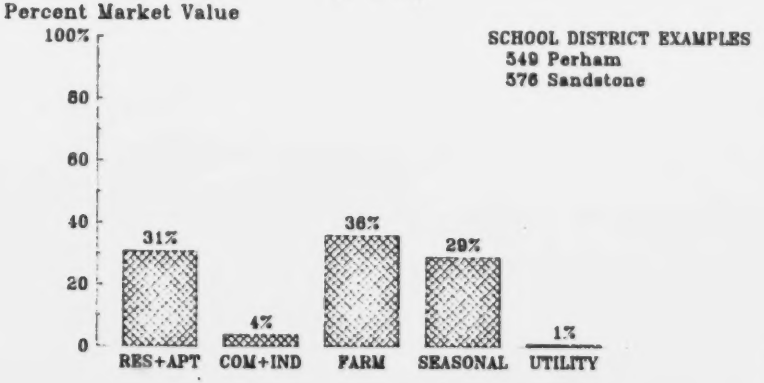


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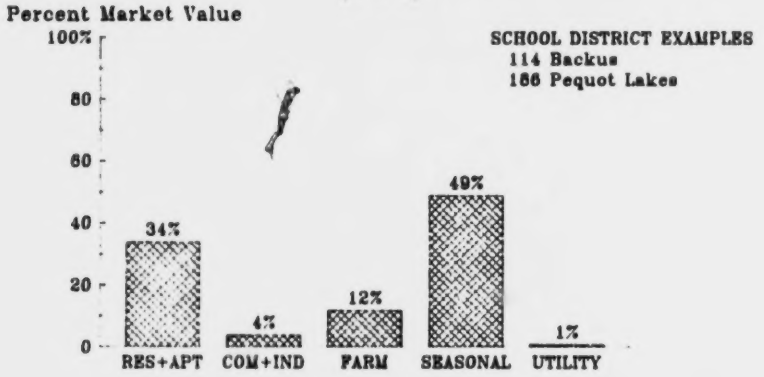
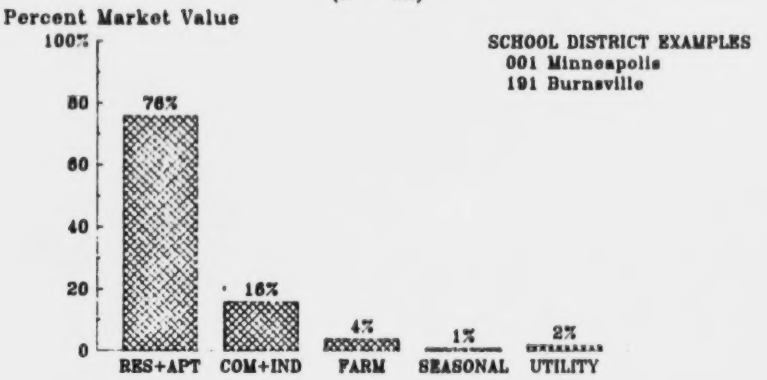
FIGURE 1
(CONTINUED)

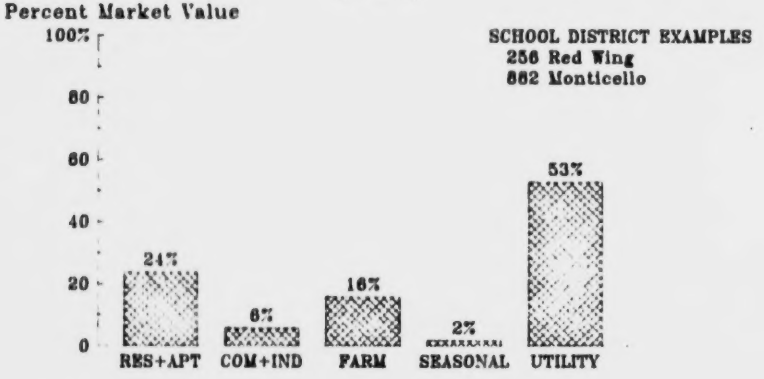
CLUSTER 5
SEASONAL–REC DISTRICTS
(N = 9)



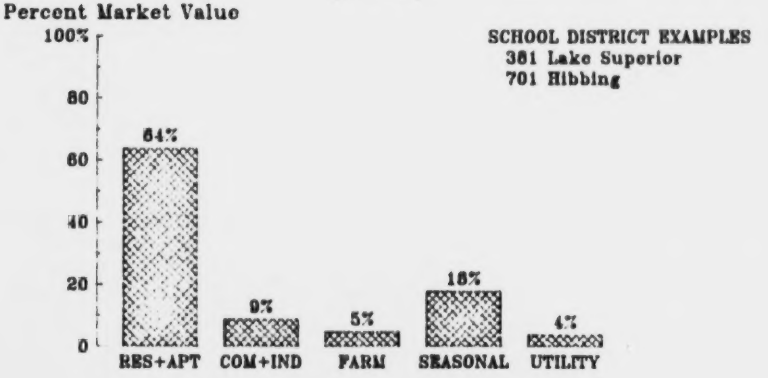
CLUSTER 6
URBAN DISTRICTS
(N = 52)



CLUSTER 7
PUBLIC UTILITY DISTRICTS
(N = 4)



CLUSTER 8
TACONITE AID DISTRICTS
(N = 21)



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containing 185 districts with an average of 87% of their valuation in farm property, has been named "Rural Farm Districts". The second cluster, containing 99 districts with an average of 63% of their valuation in farm property and 27% in residential property, has been named "Farm Town Districts". Clusters 3-7 have been named in the same manner. However, cluster 8 is named "Taconite Aid Districts", irrespective of its average score profile, since it was this factor which determined its membership of districts.

Appendix 1 presents a detailed listing of the districts within each cluster, including the property mixture profile for each district. At the end of each listing is presented the average, minimum and maximum scores for the cluster. By scanning these detailed listings, the reader can acquire a better understanding of the nature of the cluster, as well as the variation within it. Appendix 2 presents a numerically ordered listing of the school districts and indicates the cluster to which each belongs.

INTERPRETATION AND DISCUSSION

The cluster results remind those who have worked in the area of primary and secondary education in Minnesota of the preponderance of rural-type school districts in the state. While such districts tend to be small in size, they are relatively numerous, with 3 of the 4 largest clusters (numbers 1-3) being heavily agricultural in property value. Cluster 4, the Farm-Seasonal-Recreational cluster, is also comprised primarily of farm valuation.

Much less numerous are districts which are distinctly seasonal-recreational (cluster 5, with 9 districts) or distinctly public utility (cluster 7, with 4 districts), though a number of the Taconite Aid Districts would likely have been grouped into the seasonal-recreational cluster if the methodology had permitted.

The Urban Districts no longer separate into bedroom communities versus more-commercial cities, as occurred using the 1979 valuation data, although those with less than 10% or so of commercial-industrial valuation could reasonably be regarded as residential cities, if that distinction is important to a user of this classification.

In summary, this 8-category classification of Minnesota's school districts ought to be regarded merely as one possible conceptual tool for analysts, decisionmakers and administrators concerned about Minnesota's schools. It has the advantage of having been derived through the application of a systematic methodology to objective empirical data relevant to school finance decisionmaking. Obviously, Minnesota's school districts could be classified using other criteria and other empirical or non-empirical methods, depending on the intended applications.

For example, one could classify school districts based on their course offerings in a number of general categories (eg, math-science, social studies, languages, etc) for studying educational opportunity at the secondary school level and, perhaps, its relationship to funding, teacher salaries, community characteristics, subsequent student educational or occupational performance, and so on. Alternatively, one could classify school districts based on their demographic characteristics (eg, percentage minority students, family economic status, etc) for use in considering remedial educational needs and programs. Or one could classify school districts on the basis of such factors as student body size and district area size for a study of funding needs. The possibilities are endless, depending primarily on the creativity of the analyst and the informational needs of the relevant decisionmakers.

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APPENDIX 1

SCHOOL DISTRICT CLUSTERS
BASED ON ESTIMATED MARKET VALUE

APPENDIX 1
SCHOOL DISTRICT CLUSTERS BASED ON ESTIMATED MARKET VALUE

CLUSTER 1: RURAL FARM DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
57 BEARDSLEY	5.0	1.0	91.7	2.1	.1
58 CLINTON	6.1	.6	92.5	.7	.1
60 GRACEVILLE	5.1	.8	93.7	0	.4
70 LAKE CRYSTAL	20.7	2.7	76.5	0	.1
72 MAPLETON	13.6	2.0	84.4	0	0
75 ST. CLAIR	18.2	.8	80.9	0	.1
78 GARDEN CITY	13.0	1.4	84.9	.1	.6
79 AMBOY-GOODTHUNDER	11.6	2.0	86.3	0	.1
81 COMFREY	4.3	.9	94.7	0	.1
84 SLEEPY EYE	15.0	2.9	82.0	0	.1
85 SPRINGFIELD	13.2	3.7	82.9	0	.2
126 CLARA CITY	14.7	2.7	82.5	0	0
127 MAYNARD	3.8	1.0	95.1	0	.1
128 MILAN	5.6	.7	93.5	0	.1
145 GLYNDON-FELTON	8.7	1.5	89.6	0	.1
146 BARNESVILLE	13.1	2.5	84.3	0	0
158 GONVICK-TRAIL	10.1	2.4	84.0	3.3	.3
173 MOUNTAIN LAKE	12.9	3.0	84.0	0	.1
175 WESTBROOK	8.7	1.9	89.3	0	.1
178 STORDEN-JEFFERS	4.7	1.4	93.7	0	.3
201 CLAREMONT	9.1	1.4	89.4	0	.1
203 HAYFIELD	13.3	2.8	83.8	0	.1
205 WEST CONCORD	11.6	.9	87.5	0	0
208 EVANSVILLE	14.6	2.2	77.8	4.3	1.1
209 KENSINGTON	11.1	1.2	84.3	3.3	.1
217 BRICELYN	5.0	2.1	92.8	0	.2
218 DELAVAN	2.1	.8	96.3	.7	0
219 ELMORE	8.0	2.3	89.5	0	.1
222 KIESTER-WALTERS	8.5	1.4	90.0	.1	.1
223 MINNESOTA LAKE	7.6	2.3	90.1	0	.1
224 WELLS	15.5	3.9	80.5	0	0
225 WINNEBAGO	16.2	3.9	78.2	.3	1.4
228 HARMONY	13.9	2.7	82.4	0	1.1
229 LANESBORO	15.1	1.6	83.1	.1	.1
232 PETERSON	10.0	1.4	88.4	.2	0
236 WYKOFF	9.0	1.7	88.9	.3	0
238 MABEL-CANTON	16.0	2.3	81.2	.2	.3
240 BLUE EARTH	17.7	4.8	77.4	0	.1
242 ALDEN	10.9	2.1	86.8	.1	.1
243 EMMONS	12.6	1.3	84.1	0	2.0
244 FREEBORN	6.5	.6	92.8	.1	.1
245 GLENVILLE	10.3	1.4	88.2	0	.1
253 GOODHUE	10.6	1.8	87.5	0	.1
254 KENYON	16.1	2.8	80.9	0	.1
258 WANAMINGO	16.4	3.0	80.4	0	.1
262 BARRETT	8.8	2.0	88.4	.6	.1
263 ELBOW LAKE	12.8	3.5	82.2	1.2	.3
264 HERMAN	4.6	1.5	93.8	0	.1
265 HOFFMAN	13.4	2.6	82.8	1.2	.1
324 JACKSON	14.4	2.8	82.3	.2	.4
325 LAKEFIELD	13.7	2.0	83.0	0	1.2
328 SIOUX VALLEY	.6	.2	99.2	0	.1
330 HERON LAKE-OKABENA	5.3	2.0	92.3	0	.4
346 RAYMOND	9.5	1.1	89.4	0	.1
351 HALLOCK	15.1	3.0	81.6	0	.3
352 HUMBOLDT-ST. VINCENT	2.0	1.2	75.7	0	21.0
353 KARLSTAD	13.8	3.0	82.3	.3	.6
354 KENNEDY	4.0	1.1	92.9	0	2.0
356 LANCASTER	4.9	1.2	93.1	.7	.1

PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE

SCHOOL DISTRICT	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
371 BELLINGHAM	4.9	1.5	93.6	0	0
376 MARIETTA	7.7	1.6	90.4	0	.3
377 MADISON	16.3	4.6	79.0	0	0
378 DAWSON-BOYD	11.9	7.9	80.0	0	.2
402 HENDRICKS	17.5	3.1	78.2	1.2	.1
403 IVANHOE	12.3	2.4	84.7	.5	.1
404 LAKE BENTON	14.2	2.3	79.5	2.1	1.9
408 VERDI	1.7	.3	97.9	0	0
409 TYLER	19.3	3.6	76.1	.1	.8
411 BALATON	10.8	.8	87.4	0	1.0
412 COTTONWOOD	10.8	2.7	86.4	0	.2
414 MINNEOTA	14.7	1.9	83.3	0	.1
415 LYND	12.6	1.0	86.4	0	0
417 TRACY	12.8	2.3	81.2	3.4	.4
418 RUSSELL	11.6	1.1	87.2	0	.1
421 BROWNTON	14.3	1.0	84.3	.2	.1
425 SILVER LAKE	20.2	1.7	78.0	0	0
426 STEWART	8.4	1.3	89.6	.7	0
432 MAHNOMEN	17.0	3.0	77.1	2.8	.2
436 ALVARADO	5.5	.5	94.0	0	.1
437 ARGYLE	7.3	1.7	90.8	0	.2
440 MIDDLE RIVER	6.8	2.0	90.6	.6	0
441 NEWFOLDEN	4.5	1.2	86.5	.1	7.7
442 OSLO	9.9	3.7	86.3	0	.1
443 STEPHEN	7.7	1.6	90.6	0	.1
444 STRANDQUIST	2.7	1.2	95.1	.8	.2
446 WARREN	11.3	2.8	84.9	0	1.0
447 GRYGLA-GATZKE	3.2	1.2	94.0	1.3	.2
451 CEYLON	5.6	.6	93.8	0	0
453 EAST CHAIN	1.9	.1	98.0	0	0
456 SHERBURN	9.2	1.7	79.9	.1	9.1
457 TRIMONT	7.3	1.4	90.9	0	.4
458 TRUMAN	8.0	1.5	90.3	0	.1
459 WELCOME	9.8	2.0	85.2	.2	2.7
460 GRANADA-HUNTLEY	3.6	1.2	95.2	0	0
461 COSMOS	6.6	1.0	92.3	0	.1
464 GROVE CITY	9.1	1.1	88.8	.8	.2
487 UPSALA	17.2	1.7	77.0	3.7	.4
495 GRAND MEADOW	13.0	2.1	84.8	0	0
497 LYLE	10.0	.8	89.0	.1	.1
499 LE ROY-OSTRANDER	13.2	2.9	83.8	0	.1
500 SOUTHLAND	10.0	1.5	87.1	.1	1.4
505 FULDA	9.4	1.1	89.4	0	.1
507 NICOLLET	10.4	1.2	88.4	0	0
511 ADRIAN	9.2	1.4	89.3	0	.1
513 BREWSTER	5.7	1.8	92.4	0	.1
514 ELLSWORTH	7.6	.7	91.6	0	.1
516 ROUND LAKE	8.1	2.6	89.1	.1	0
521 ADA	16.9	2.9	79.0	0	1.2
522 BORUP	1.4	.4	98.2	0	0
523 GARY	4.1	.6	95.2	0	.2
524 HALSTAD	11.3	1.6	86.9	0	.3
525 HENDRUM-PERLEY	7.1	1.0	91.8	0	.1
526 TWIN VALLEY	18.3	1.7	79.9	0	.2
543 DEER CREEK	16.9	2.0	80.8	0	.3
561 GOODRIDGE	1.7	.3	97.9	0	.1
581 EDGERTON	16.8	2.4	80.7	0	.1
582 JASPER	7.0	1.9	91.0	0	0
584 RUTHTON	5.1	1.0	93.8	0	.1
592 CLIMAX	6.5	1.3	92.2	0	.1
599 FERTILE-BELTRAMI	10.8	2.1	86.7	0	.5
600 FISHER	4.7	.6	94.7	0	.1
603 MC INTOSH	12.7	2.4	80.7	0	4.2
611 CYRUS	9.1	1.9	89.0	0	.1
627 OKLEE	8.8	1.5	89.6	0	.2
628 PLUMMER	7.8	2.1	86.8	0	3.3
630 RED LAKE FALLS	15.6	4.1	79.6	0	.7
631 BELVIEW	4.9	.8	94.3	0	0

PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE

SCHOOL DISTRICT	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
633 LAMBERTON	8.9	1.7	89.1	0	.3
635 MILROY	4.1	.6	95.2	0	.1
636 MORGAN	6.7	1.2	92.0	0	0
638 SANBORN	5.1	1.9	92.9	0	0
640 WABASSO	5.8	1.2	92.9	0	.1
641 WALNUT GROVE	6.2	1.5	92.2	0	.1
646 BIRD ISLAND	10.4	1.8	86.2	0	1.5
647 BUFFALO LAKE	7.6	2.6	89.6	.1	.1
648 DANUBE	6.9	.6	92.3	0	.2
649 FAIRFAX	12.5	2.3	85.2	0	0
650 FRANKLIN	6.2	.6	92.1	0	1.1
651 HECTOR	10.5	2.6	86.8	0	.1
652 MORTON	8.4	1.1	90.5	0	0
654 RENVILLE	12.4	9.7	77.8	0	.1
655 SACRED HEART	5.9	1.4	92.6	0	.1
669 MAGNOLIA	4.0	2.1	93.3	0	.6
671 HILLS-BEAVER CREEK	8.8	1.6	89.4	0	.2
676 BADGER	6.3	2.7	90.7	.1	.2
678 GREENBUSH	8.1	2.0	89.4	.3	.3
682 ROSEAU	16.9	4.7	77.4	.7	.3
707 NETT LAKE	0	0	88.7	11.3	0
731 ARLINGTON	18.1	2.7	79.0	0	.2
732 GAYLORD	16.8	3.0	80.0	0	.1
733 GIBBON	7.8	1.2	91.0	0	0
734 HENDERSON	14.9	1.2	83.9	0	0
735 WINTHROP	10.2	1.8	87.8	0	.2
736 BELGRADE	17.2	3.6	78.9	0	.2
737 BROOTEN	11.0	1.9	82.1	4.2	.9
756 BLOOMING PRAIRIE	13.4	2.1	84.4	0	0
762 ELLENDALE-GENEVA	15.2	1.9	80.2	1.0	1.7
763 MEDFORD	16.6	2.1	81.2	0	.1
768 HANCOCK	13.1	2.2	84.2	0	.4
771 CHOKIO-ALBERTA	4.8	.7	94.4	0	.1
775 KERKHOVEN-MURDOCK-SU	6.3	1.1	92.3	.1	.1
777 BENSON	14.9	3.4	79.9	0	1.8
784 APPLETON	10.1	1.9	87.5	0	.4
786 BERTHA-HEWITT	13.6	1.9	84.2	0	.3
790 EAGLE BEND	19.8	2.7	77.2	.1	.2
803 WHEATON	10.4	1.8	86.9	.1	.8
806 ELGIN-MILLVILLE	20.6	2.4	76.9	0	.1
818 VERNDALE	17.0	2.1	74.0	.1	6.8
820 SEBEKA	14.9	1.8	82.7	.4	.2
827 NEW RICHLAND-HARTLAN	11.2	2.3	85.9	.3	.2
836 BUTTERFIELD	5.0	1.0	93.9	0	.1
837 MADELIA	13.5	2.7	83.7	0	.1
840 ST. JAMES	16.9	4.1	78.6	.2	.1
846 BRECKENRIDGE	16.8	3.1	80.0	0	.1
850 ROTHSAY	5.7	1.3	92.9	0	.1
852 CAMPBELL-TINTAH	2.1	.9	96.8	0	.1
857 LEWISTON	13.8	3.5	82.0	0	.6
891 CANBY	15.2	2.7	81.8	0	.4
892 CLARKFIELD	7.6	1.5	90.9	0	.1
893 ECHO	4.1	.9	94.9	0	0
896 WOOD LAKE	5.8	1.5	92.6	0	.1
913 WALDORF-PEMBERTON	5.4	.7	93.9	0	0
914 ULEN-HITTERDAL	6.8	.8	92.2	0	.2
918 CHANDLER-LAKE WILSON	6.8	1.6	91.5	0	.1
998 PRINSBURG	18.3	2.8	78.9	0	0
CLUSTER AVERAGE (N=185)	10.2	1.9	87.0	.3	.5
CLUSTER MINIMUM	0	0	74.0	0	0
CLUSTER MAXIMUM	20.7	9.7	99.2	11.3	21.0

CLUSTER 2: FARM TOWN DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
24 LAKE PARK	20.3	2.5	58.9	18.1	.2
36 KELLIHER	15.7	2.2	62.0	19.3	.7
51 FOLEY	21.6	2.9	75.2	0	.3
62 ORTONVILLE	29.8	4.6	62.3	2.4	.9
88 NEW ULM	35.3	7.8	56.8	0	.1
91 BARNUM	28.7	2.3	55.8	11.9	1.3
95 CROMWELL	22.0	4.9	55.7	14.9	2.4
108 NORWOOD-YOUNG AMERIC	30.1	6.3	63.2	0	.4
111 WATERTOWN-MAYER	35.3	3.7	60.9	.1	.1
129 MONTEVIDEO	33.1	8.4	58.1	0	.5
140 TAYLORS FALLS	38.6	5.2	51.1	3.3	1.9
150 HAWLEY	26.0	3.1	70.0	.8	.1
161 CLEARBROOK	17.2	1.9	58.4	3.6	19.0
162 BAGLEY	29.1	5.1	53.1	6.0	6.6
177 WINDOM	24.2	6.1	69.4	.3	.1
195 RANDOLPH	24.8	2.1	70.5	1.2	1.4
202 DODGE CENTER	27.2	6.2	66.2	0	.4
204 KASSON-MANTORVILLE	37.0	2.7	60.0	.1	.2
207 BRANDON	22.0	2.1	65.0	10.6	.3
213 OSAKIS	26.7	2.9	58.6	11.3	.5
227 CHATFIELD	21.2	3.1	75.4	.2	.1
233 PRESTON-FOUNTAIN	24.2	5.3	70.3	.1	.1
234 RUSHFORD	26.1	6.8	66.7	0	.4
237 SPRING VALLEY	28.0	5.2	66.3	.2	.3
252 CANNON FALLS	37.5	10.0	52.3	.1	.1
255 PINE ISLAND	31.5	4.4	63.9	0	.1
260 ZUMBROTA	35.0	7.3	56.8	.1	.7
261 ASHBY	16.2	3.7	72.1	7.9	.1
294 HOUSTON	23.5	2.2	74.0	0	.2
297 SPRING GROVE	22.4	2.7	74.7	0	.2
299 CALEDONIA	30.6	3.3	65.9	.2	.1
314 BRAHAM	32.4	3.0	58.5	5.0	1.0
333 OGILVIE	21.8	1.8	68.4	7.8	.2
341 ATWATER	14.2	1.6	71.9	12.2	.1
363 SOUTH KOOCHICHING	22.2	2.7	64.6	10.0	.4
391 CLEVELAND	23.4	.6	64.6	11.4	.1
392 LE CENTER	25.9	3.4	69.4	1.4	0
393 LE SUEUR	29.9	9.9	59.8	.2	.1
394 MONTGOMERY-LONSDALE	32.0	3.4	62.5	.5	1.7
395 WATERVILLE-ELYSIAN	25.9	1.9	63.1	7.6	1.5
422 GLENCOE	32.3	7.0	60.4	0	.2
424 LESTER PRAIRIE	29.9	4.7	65.2	0	.1
435 WAUBUN	11.4	1.0	68.3	19.2	.1
463 EDEN VALLEY-WATKINS	25.2	3.3	59.1	12.3	.2
465 LITCHFIELD	34.1	7.0	54.5	4.3	.1
466 DASSEL-COKATO	31.7	5.4	56.3	6.2	.4
484 PIERZ	23.4	3.9	68.0	4.6	.1
485 ROYALTON	28.3	2.9	61.8	2.3	4.8
486 SWANVILLE	17.6	2.2	70.3	9.8	.2
504 SLAYTON	20.6	4.1	73.2	1.9	.2
518 WORTHINGTON	34.4	9.0	56.5	0	.1
531 BYRON	39.3	2.3	58.1	0	.2
533 DOVER-EYOTA	23.1	1.6	74.6	0	.7
534 STEWARTVILLE	35.2	4.2	60.3	0	.3
545 HENNING	22.2	2.7	56.6	17.5	.9
547 PARKERS PRAIRIE	18.9	2.2	68.9	9.9	.1
550 UNDERWOOD	19.6	1.1	68.1	11.1	.1
553 NEW YORK MILLS	21.2	3.4	71.4	3.1	.9
564 THIEF RIVER FALLS	40.2	9.1	50.5	0	.2
573 HINCKLEY	26.2	7.1	51.7	14.8	.3
583 PIPESTONE	25.3	5.6	68.4	0	.6
593 CROOKSTON	27.7	7.4	64.2	0	.7
595 EAST GRAND FORKS	39.4	10.2	50.1	0	.2

PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE

SCHOOL DISTRICT	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
597 ERSKINE	21.6	3.7	60.5	14.1	.1
601 FOSSTON	18.5	3.7	74.7	2.7	.4
612 GLENWOOD	30.7	7.0	53.9	7.9	.6
614 STARBUCK	23.2	3.0	67.9	5.8	.1
615 VILLARD	14.3	1.3	70.4	13.9	.1
637 REDWOOD FALLS	34.8	9.3	55.8	0	.2
653 OLIVIA	21.5	5.9	72.5	0	.1
657 MORRISTOWN	25.1	1.6	69.8	3.4	.1
670 LUVERNE	27.5	6.7	65.5	0	.2
690 WARROAD	25.3	11.1	47.9	13.3	2.5
716 BELLE PLAINE	31.3	3.7	64.8	0	.2
717 JORDAN	40.0	6.3	52.6	.8	.3
721 NEW PRAGUE	34.2	3.5	61.5	.6	.2
738 HOLDINGFORD	26.6	2.6	68.6	2.1	.1
739 KIMBALL	23.1	1.4	65.2	10.0	.3
740 MELROSE	25.0	4.7	64.7	5.2	.4
741 PAYNESVILLE	28.7	4.1	57.0	9.4	.8
743 SAUK CENTRE	34.8	6.6	55.1	3.4	.2
745 ALBANY	37.6	5.2	55.0	1.7	.5
769 MORRIS	30.3	9.0	60.3	.1	.2
787 BROWERVILLE	25.9	3.9	61.8	8.2	.2
789 CLARISSA	24.9	3.7	71.3	0	.1
792 LONG PRAIRIE	38.0	7.3	51.8	1.8	1.0
793 STAPLES	32.9	5.4	49.9	10.6	1.1
801 BROWNS VALLEY	20.9	2.8	72.5	3.9	0
809 MAZEPPA	26.3	2.2	70.1	1.3	.1
810 PLAINVIEW	23.5	4.9	70.3	.4	1.0
813 LAKE CITY	38.7	7.4	52.0	1.8	.2
821 MENAHGA	32.9	3.6	56.3	6.6	.6
829 WASECA	39.8	9.0	50.8	.1	.3
830 JANESVILLE	23.5	2.2	73.7	.5	0
858 ST. CHARLES	24.3	4.2	71.3	0	.1
880 HOWARD LAKE-WAVERLY	35.8	5.2	54.6	4.1	.3
894 GRANITE FALLS	25.2	5.4	64.6	0	4.8
912 MILACA	26.7	5.6	63.7	1.9	2.0
993 FRANCONIA	24.2	0	75.8	0	0
CLUSTER AVERAGE (N= 99)	27.4	4.5	63.1	4.3	.8
CLUSTER MINIMUM	11.4	0	47.9	0	0
CLUSTER MAXIMUM	40.2	11.1	75.8	19.3	19.0

CLUSTER 3: FARM REGIONAL CENTER DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
22 DETROIT LAKES	53.1	12.5	18.8	15.4	.1
31 BEMIDJI	60.4	12.2	16.2	9.7	1.4
47 SAUK RAPIDS	61.5	8.7	23.2	1.5	5.2
93 CARLTON	54.4	5.7	18.0	7.0	14.8
110 WACONIA	50.3	7.1	38.5	.6	3.4
138 NORTH BRANCH	50.5	4.4	37.3	1.6	6.2
139 RUSH CITY	38.7	8.3	41.0	10.5	1.4
141 CHISAGO LAKES	65.4	4.7	23.3	6.4	.2
152 MOORHEAD	62.5	13.7	23.7	0	.1
192 FARMINGTON	59.9	5.5	31.1	0	3.5
200 HASTINGS	67.6	8.7	23.0	.5	.3
206 ALEXANDRIA	51.8	9.8	23.1	14.6	.7
241 ALBERT LEA	49.5	12.6	36.8	0	1.1
300 LA CRESCENT	70.6	4.1	24.5	.8	0
332 MORA	43.0	8.7	39.1	9.1	.1
347 WILLMAR	52.9	12.5	33.1	1.1	.5
362 LITTLEFORK-BIG FALLS	42.1	4.4	38.9	5.8	8.7
413 MARSHALL	44.1	18.3	37.0	0	.6
423 HUTCHINSON	47.0	10.8	41.9	.2	0
427 WINSTED	49.8	10.6	39.2	0	.3
454 FAIRMONT	51.9	11.0	36.8	.1	.2
477 PRINCETON	42.9	10.3	42.6	4.2	.1
482 LITTLE FALLS	47.7	8.1	41.0	2.0	1.2
492 AUSTIN	61.4	15.2	23.3	0	0
508 ST. PETER	47.7	8.0	43.5	.6	.3
544 FERGUS FALLS	47.5	10.5	32.0	2.4	7.6
656 FARIBAULT	50.8	10.0	36.0	2.0	1.2
659 NORTHFIELD	50.8	9.1	39.6	.3	.2
727 BIG LAKE	61.5	7.3	21.2	9.9	.1
728 ELK RIVER	65.5	9.1	21.5	.7	3.1
750 COLD SPRING	50.7	6.2	30.3	12.0	.7
761 OWATONNA	47.7	11.4	40.3	0	.6
811 WABASHA	47.3	7.3	37.1	8.2	.1
819 WADENA	51.8	14.5	33.6	0	.1
861 WINONA	62.1	16.9	20.3	.2	.5
877 BUFFALO	52.6	4.6	27.4	1.8	13.5
879 DELANO	58.3	6.0	34.3	.6	.8
881 MAPLE LAKE	43.8	2.4	38.2	11.7	3.8
883 ROCKFORD	64.8	5.8	28.7	.4	.2
885 ST. MICHAEL-ALBERTVI	63.9	6.2	29.5	.3	.1
911 CAMBRIDGE	51.4	6.6	36.9	3.9	1.2
CLUSTER AVERAGE (N= 41)	53.6	9.0	31.8	3.6	2.1
CLUSTER MINIMUM	38.7	2.4	16.2	0	0
CLUSTER MAXIMUM	70.6	18.3	43.5	15.4	14.8

CLUSTER 4: FARM SEASONAL-RECREATIONAL DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
2 HILL CITY	31.7	4.5	25.1	38.1	.6
21 AUDUBON	23.6	2.3	39.1	32.7	2.4
23 FRAZEE-VERGAS	35.4	3.1	44.0	17.0	.5
32 BLACKDUCK	32.9	4.0	46.7	16.1	.3
97 MOOSE LAKE	44.4	6.4	28.0	20.2	1.0
117 PINE RIVER	34.7	4.0	23.6	37.4	.3
301 AKELEY	41.4	3.0	23.4	25.8	6.4
309 PARK RAPIDS	41.3	9.1	18.6	29.9	1.1
345 NEW LONDON-SPICER	42.6	2.8	32.5	21.7	.3
390 LAKE OF THE WOODS	26.4	4.3	49.3	19.4	.5
473 ISLE	32.8	3.3	26.4	37.1	.3
480 ONAMIA	23.6	3.3	30.8	42.2	.1
483 MOTLEY	26.0	2.1	28.9	42.0	.9
542 BATTLE LAKE	24.6	1.8	30.7	42.8	.1
548 PELICAN RAPIDS	24.3	2.9	40.2	32.1	.5
549 PERHAM	31.2	5.3	35.6	27.0	.9
566 ASKOV	27.1	4.6	47.0	20.8	.4
570 FINLAYSON	21.4	2.7	45.7	29.1	1.1
576 SANDSTONE	30.2	4.8	36.9	27.2	.8
577 WILLOW RIVER	26.6	2.8	40.6	29.7	.4
578 PINE CITY	37.1	7.9	36.3	16.4	2.3
604 MENTOR	10.7	2.4	55.6	31.3	0
791 GREY EAGLE	24.4	1.7	48.4	25.5	0
876 ANNANDALE	39.8	3.3	25.5	31.2	.2
CLUSTER AVERAGE (N= 24)	30.6	3.8	35.8	28.9	.9
CLUSTER MINIMUM	10.7	1.7	18.6	16.1	0
CLUSTER MAXIMUM	44.4	9.1	55.6	42.8	6.4

CLUSTER 5: SEASONAL-RECREATIONAL-RESIDENTIAL DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
4 MC GREGOR	25.0	3.6	23.8	47.6	.1
114 BACKUS	33.0	1.8	14.3	51.0	0
115 CASS LAKE	43.7	15.0	8.3	30.3	2.6
116 PILLAGER	26.4	.8	18.2	51.0	3.6
118 REMER	30.5	2.6	6.0	60.8	.2
119 WALKER-HACKENSACK	39.2	5.0	3.2	52.4	.1
186 PEQUOT LAKES	33.2	3.6	2.7	60.0	.4
306 LAPORTE	37.9	2.0	20.2	39.6	.2
308 NEVIS	35.3	2.4	11.0	51.0	.3
CLUSTER AVERAGE (N= 9)	33.8	4.1	12.0	49.3	.8
CLUSTER MINIMUM	25.0	.8	2.7	30.3	0
CLUSTER MAXIMUM	43.7	15.0	23.8	60.8	3.6

CLUSTER 6: URBAN DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
11 ANOKA	88.9	8.3	2.1	0	.6
12 CENTENNIAL	87.8	9.9	2.1	0	.1
13 COLUMBIA HEIGHTS	83.1	16.9	0	0	0
14 FRIDLEY	82.0	18.0	0	0	0
15 ST. FRANCIS	75.8	3.2	19.6	1.3	.1
16 SPRING LAKE PARK	63.2	36.1	.4	0	.3
38 REDLAKE	62.2	9.4	0	0	28.5
77 MANKATO	65.0	19.5	12.3	.4	2.8
94 CLOQUET	67.4	28.2	1.9	.5	2.0
99 ESKO	69.0	2.6	11.3	.1	16.9
112 CHASKA	67.0	15.7	16.6	.5	.2
147 DILWORTH	91.7	6.4	1.8	0	.1
181 BRAINERD	56.9	12.0	7.7	23.0	.4
191 BURNSVILLE	74.3	18.7	.6	0	6.4
194 LAKEVILLE	67.0	12.6	19.7	.3	.3
196 ROSEMOUNT	81.2	12.6	4.6	0	1.6
197 WEST ST. PAUL	76.1	22.7	.8	0	.4
199 INVER GROVE-PINE BEN	75.0	15.6	2.0	0	7.3
270 HOPKINS	70.4	29.4	.1	0	.1
271 BLOOMINGTON	75.3	24.3	.1	0	.2
272 EDEN PRAIRIE	67.7	30.7	1.2	0	.4
273 EDINA	82.4	17.5	0	0	.2
276 MINNETONKA	93.1	5.3	.4	1.1	.2
277 WESTONKA	90.9	5.0	1.8	2.2	.1
278 ORONO	86.5	6.8	5.7	1.0	0
279 OSSEO	86.7	10.7	2.4	0	.2
280 RICHFIELD	83.2	16.8	0	0	0
281 ROBBINSDALE	83.9	15.7	.1	0	.2
282 ST. ANTHONY-NEW BRIG	82.4	17.2	0	0	.4
283 ST. LOUIS PARK	77.3	22.5	0	0	.2
284 WAYZATA	70.1	27.5	1.7	.2	.5
286 BROOKLYN CENTER	66.3	33.7	0	0	0
361 INTERNATIONAL FALLS	64.7	22.7	4.2	7.7	.7
535 ROCHESTER	72.8	18.1	8.9	.1	.2
621 MOUNDS VIEW	79.2	20.1	.1	.1	.6
622 NORTH ST. PAUL-MAPLE	70.5	27.7	1.2	0	.6
623 ROSEVILLE	77.9	21.4	.2	0	.5
624 WHITE BEAR LAKE	87.6	10.9	1.2	.1	.2
625 ST. PAUL	75.2	23.8	0	0	1.0
700 HERMANTOWN	62.5	9.6	1.3	6.0	20.6
704 PROCTOR	83.2	7.6	3.6	5.2	.3
709 DULUTH	80.3	16.0	.2	.7	2.7
719 PRIOR LAKE	81.5	3.2	12.6	2.3	.4
720 SHAKOPEE	57.8	25.4	12.2	0	4.5
742 ST. CLOUD	69.8	20.6	8.0	1.3	.4
748 SARTELL	61.2	22.2	14.9	.7	1.0
831 FOREST LAKE	80.4	6.6	8.8	3.9	.3
832 MAHTOMEDI	91.3	2.8	3.8	1.9	.2
833 SOUTH WASHINGTON COU	82.8	10.3	5.6	0	1.3
834 STILLWATER	75.1	9.2	5.8	1.3	8.7
991 MINNEAPOLIS	70.9	28.2	0	0	.8
996 SOUTH ST. PAUL	86.4	13.3	0	0	.3
CLUSTER AVERAGE (N= 52)	76.2	16.4	4.0	1.2	2.2
CLUSTER MINIMUM	56.9	2.6	0	0	0
CLUSTER MAXIMUM	93.1	36.1	19.7	23.0	28.5

CLUSTER 7: PUBLIC UTILITY DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
100 WRENSHALL	23.5	7.2	26.7	3.0	39.6
256 RED WING	31.7	9.6	12.0	.4	46.3
726 BECKER	8.4	.8	12.7	1.4	76.7
882 MONTICELLO	31.0	5.4	14.0	1.4	48.2
CLUSTER AVERAGE (N= 4)	23.6	5.7	16.4	1.6	52.7
CLUSTER MINIMUM	8.4	.8	12.0	.4	39.6
CLUSTER MAXIMUM	31.7	9.6	26.7	3.0	76.7

CLUSTER 8: TACONITE AID DISTRICTS

SCHOOL DISTRICT	PERCENTAGE OF MARKET VALUE BY PROPERTY TYPE				
	RESIDENTIAL	COMM-IND	FARM	SEASONAL	UTILITY
1 AITKIN	34.1	4.7	22.0	38.9	.4
166 COOK COUNTY	35.3	4.6	.7	59.3	.2
182 CROSBY-IRONTON	49.0	4.5	4.2	40.2	2.2
316 COLERAINE	74.0	14.7	4.6	5.1	1.6
317 DEER RIVER	47.3	3.7	11.8	27.4	9.8
318 GRAND RAPIDS	39.4	9.9	4.1	11.7	35.0
319 NASHWAUK-KEEWATIN	67.8	12.1	5.2	13.3	1.7
381 LAKE SUPERIOR	69.1	7.2	.8	21.4	1.4
691 AURORA-HOYT LAKES	68.9	6.7	1.9	3.2	19.3
692 BABBITT	88.3	4.0	2.2	4.9	.7
693 BIWABIK	77.5	8.6	1.1	12.3	.6
695 CHISHOLM	89.0	8.6	1.5	.7	.2
696 ELY	70.3	6.1	.3	23.1	.2
697 EVELETH	82.6	11.2	.6	4.6	1.0
698 FLOODWOOD	49.5	6.5	24.5	14.9	4.7
699 GILBERT	83.9	12.5	1.8	1.9	.0
701 HIBBING	77.9	15.8	.6	5.1	.5
706 VIRGINIA	79.3	18.3	.9	1.1	.4
708 TOWER-SOUDAN	36.3	1.4	.4	61.7	.2
710 ST. LOUIS COUNTY	48.6	8.3	9.1	26.2	7.8
712 MT.IRON-BUHL	73.8	19.0	.8	4.4	2.0
CLUSTER AVERAGE (N= 21)	63.9	9.0	4.7	18.2	4.3
CLUSTER MINIMUM	34.1	4.0	0.3	0.7	0.0
CLUSTER MAXIMUM	89.0	19.0	24.5	61.7	35.0

APPENDIX 2

ORDERED LISTING OF SCHOOL DISTRICTS WITH CLUSTER ID

APPENDIX 2

ORDERED LISTING OF SCHOOL DISTRICTS WITH CLUSTER ID

CLUSTER	SCHOOL DISTRICT		CLUSTER	SCHOOL DISTRICT	
8	1	AITKIN	6	147	DILWORTH
4	2	HILL CITY	2	150	HAWLEY
5	4	MC GREGOR	3	152	MOORHEAD
6	11	ANOKA	1	158	GONVICK-TRAIL
6	12	CENTENNIAL	2	161	CLEARBROOK
6	13	COLUMBIA HEIGHTS	2	162	BAGLEY
6	14	FRIDLEY	8	166	COOK COUNTY
6	15	ST. FRANCIS	1	173	MOUNTAIN LAKE
6	16	SPRING LAKE PARK	1	175	WESTBROOK
4	21	AUDUBON	2	177	WINDOM
3	22	DETROIT LAKES	1	178	STORDEN-JEFFERS
4	23	FRAZEE-VERGAS	6	181	BRAINERD
2	24	LAKE PARK	8	182	CROSBY-IRONTON
3	31	BEMIDJI	5	186	PEQUOT LAKES
4	32	BLACKDUCK	6	191	BURNSVILLE
2	36	KELLIHER	3	192	FARMINGTON
6	38	REDLAKE	6	194	LAKEVILLE
3	47	SAUK RAPIDS	2	195	RANDOLPH
2	51	FOLEY	6	196	ROSEMOUNT
1	57	BEARDSLEY	6	197	WEST ST. PAUL
1	58	CLINTON	6	199	INVER GROVE-PINE BEN
1	60	GRACEVILLE	3	200	HASTINGS
2	62	ORTONVILLE	1	201	CLAREMONT
1	70	LAKE CRYSTAL	2	202	DODGE CENTER
1	72	MAPLETON	1	203	HAYFIELD
1	75	ST. CLAIR	2	204	KASSON-MANTORVILLE
6	77	MANKATO	1	205	WEST CONCORD
1	78	GARDEN CITY	3	206	ALEXANDRIA
1	79	AMBOY-GOODTHUNDER	2	207	BRANDON
1	81	COMFREY	1	208	EVANSVILLE
1	84	SLEEPY EYE	1	209	KENSINGTON
1	85	SPRINGFIELD	2	213	OSAKIS
2	88	NEW ULM	1	217	BRICELYN
2	91	BARNUM	1	218	DELAVAN
3	93	CARLTON	1	219	ELMORE
6	94	CLOQUET	1	222	KIESTER-WALTERS
2	95	CROMWELL	1	223	MINNESOTA LAKE
4	97	MOOSE LAKE	1	224	WELLS
6	99	ESKO	1	225	WINNEBAGO
7	100	WRENSHALL	2	227	CHATFIELD
2	108	NORWOOD-YOUNG AMERIC	1	228	HARMONY
3	110	WACONIA	1	229	LANESBORO
2	111	WATERTOWN-MAYER	1	232	PETERSON
6	112	CHASKA	2	233	PRESTON-FOUNTAIN
5	114	BACKUS	2	234	RUSHFORD
5	115	CASS LAKE	1	236	WYKOFF
5	116	PILLAGER	2	237	SPRING VALLEY
4	117	PINE RIVER	1	238	MABEL-CANTON
5	118	REMER	1	240	BLUE EARTH
5	119	WALKER-HACKENSACK	3	241	ALBERT LEA
1	126	CLARA CITY	1	242	ALDEN
1	127	MAYNARD	1	243	EMMONS
1	128	MILAN	1	244	FREEBORN
2	129	MONTEVIDEO	1	245	GLENVILLE
3	138	NORTH BRANCH	2	252	CANNON FALLS
3	139	RUSH CITY	1	253	GOODHUE
2	140	TAYLORS FALLS	1	254	KENYON
3	141	CHISAGO LAKES	2	255	PINE ISLAND
1	145	GLYNDON-FELTON	7	256	RED WING
1	146	BARNESVILLE	1	258	WANAMINGO

CLUSTER KEY:

1) RURAL FARM 2) FARM TOWN 3) FARM REGIONAL CENTER 4) FARM SEASONAL-REC
5) SEASONAL-REC 6) URBAN 7) PUBLIC UTILITY 8) TACONITE AID

APPENDIX 2
(CONTINUED)

CLUSTER	SCHOOL DISTRICT		CLUSTER	SCHOOL DISTRICT	
2	260	ZUMBROTA	2	394	MONTGOMERY-LONSDALE
2	261	ASHBY	2	395	WATERVILLE-ELYSIAN
1	262	BARRETT	1	402	HENDRICKS
1	263	ELBOW LAKE	1	403	IVANHOE
1	264	HERMAN	1	404	LAKE BENTON
1	265	HOFFMAN	1	408	VERDI
6	270	HOPKINS	1	409	TYLER
6	271	BLOOMINGTON	1	411	BALATON
6	272	EDEN PRAIRIE	1	412	COTTONWOOD
6	273	EDINA	3	413	MARSHALL
6	276	MINNETONKA	1	414	MINNEOTA
6	277	WESTONKA	1	415	LYND
6	278	ORONO	1	417	TRACY
6	279	OSSEO	1	418	RUSSELL
6	280	RICHFIELD	1	421	BROWNTON
6	281	ROBBINSDALE	2	422	GLENCOE
6	282	ST. ANTHONY-NEW BRIG	3	423	HUTCHINSON
6	283	ST. LOUIS PARK	2	424	LESTER PRAIRIE
6	284	WAYZATA	1	425	SILVER LAKE
6	286	BROOKLYN CENTER	1	426	STEWART
2	294	HOUSTON	3	427	WINSTED
2	297	SPRING GROVE	1	432	MAHNOMEN
2	299	CALEDONIA	2	435	WAUBUN
3	300	LA CRESCENT	1	436	ALVARADO
4	301	AKELEY	1	437	ARGYLE
5	306	LAPORTE	1	440	MIDDLE RIVER
5	308	NEVIS	1	441	NEWFOLDEN
4	309	PARK RAPIDS	1	442	OSLO
2	314	BRAHAM	1	443	STEPHEN
8	316	COLERAINE	1	444	STRANDQUIST
8	317	DEER RIVER	1	446	WARREN
8	318	GRAND RAPIDS	1	447	GRYGLA-GATZKE
8	319	NASHWAUK-KEEWATIN	1	451	CEYLON
1	324	JACKSON	1	453	EAST CHAIN
1	325	LAKEFIELD	3	454	FAIRMONT
1	328	SIOUX VALLEY	1	456	SHERBURN
1	330	HERON LAKE-OKABENA	1	457	TRIMONT
3	332	MORA	1	458	TRUMAN
2	333	OGILVIE	1	459	WELCOME
2	341	ATWATER	1	460	GRANADA-HUNTLEY
4	345	NEW LONDON-SPICER	1	461	COSMOS
1	346	RAYMOND	2	463	EDEN VALLEY-WATKINS
3	347	WILLMAR	1	464	GROVE CITY
1	351	HALLOCK	2	465	LITCHFIELD
1	352	HUMBOLDT-ST. VINCENT	2	466	DASSEL-COKATO
1	353	KARLSTAD	4	473	ISLE
1	354	KENNEDY	3	477	PRINCETON
1	356	LANCASTER	4	480	ONAMIA
6	361	INTERNATIONAL FALLS	3	482	LITTLE FALLS
3	362	LITTLEFORK-BIG FALLS	4	483	MOTLEY
2	363	SOUTH KOOCHICHING	2	484	PIERZ
1	371	BELLINGHAM	2	485	ROYALTON
1	376	MARIETTA	2	486	SWANVILLE
1	377	MADISON	1	487	UPSALA
1	378	DAWSON-BOYD	3	492	AUSTIN
8	381	LAKE SUPERIOR	1	495	GRAND MEADOW
4	390	LAKE OF THE WOODS	1	497	LYLE
2	391	CLEVELAND	1	499	LE ROY-OSTRANDER
2	392	LE CENTER	1	500	SOUTHLAND
2	393	LE SUEUR	2	504	SLAYTON

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APPENDIX 2
(CONTINUED)

CLUSTER	SCHOOL DISTRICT		CLUSTER	SCHOOL DISTRICT	
1	505	FULDA			
1	507	NICOLLET	1	631	BELVIEW
3	508	ST. PETER	1	633	LAMBERTON
1	511	ADRIAN	1	635	MILROY
1	513	BREWSTER	1	636	MORGAN
1	514	ELLSWORTH	2	637	REDWOOD FALLS
1	516	ROUND LAKE	1	638	SANBORN
2	518	WORTHINGTON	1	640	WABASSO
1	521	ADA	1	641	WALNUT GROVE
1	522	BORUP	1	646	BIRD ISLAND
1	523	GARY	1	647	BUFFALO LAKE
1	524	HALSTAD	1	648	DANUBE
1	525	HENDRUM-PERLEY	1	649	FAIRFAX
1	526	TWIN VALLEY	1	650	FRANKLIN
2	531	BYRON	1	651	HECTOR
2	533	DOVER-EYOTA	1	652	MORTON
2	534	STEWARTVILLE	2	653	OLIVIA
6	535	ROCHESTER	1	654	RENVILLE
4	542	BATTLE LAKE	1	655	SACRED HEART
1	543	DEER CREEK	3	656	FARIBAULT
3	544	FERGUS FALLS	2	657	MORRISTOWN
2	545	HENNING	3	659	NORTHFIELD
2	547	PARKERS PRAIRIE	1	669	MAGNOLIA
4	548	PELICAN RAPIDS	2	670	LUVERNE
4	549	PERHAM	1	671	HILLS-BEAVER CREEK
2	550	UNDERWOOD	1	676	BADGER
2	553	NEW YORK MILLS	1	678	GREENBUSH
1	561	GOODRIDGE	1	682	ROSEAU
2	564	THIEF RIVER FALLS	2	690	WARROAD
4	566	ASKOV	8	691	AURORA-HOYT LAKES
4	570	FINLAYSON	8	692	BABBITT
2	573	HINCKLEY	8	693	BIWABIK
4	576	SANDSTONE	8	695	CHISHOLM
4	577	WILLOW RIVER	8	696	ELY
4	578	PINE CITY	8	697	EVELETH
1	581	EDGERTON	8	698	FLOODWOOD
1	582	JASPER	8	699	GILBERT
2	583	PIPESTONE	6	700	HERMANTOWN
1	584	RUTHTON	8	701	HIBBING
1	592	CLIMAX	6	704	PROCTOR
2	593	CROOKSTON	8	706	VIRGINIA
2	595	EAST GRAND FORKS	1	707	NETT LAKE
2	597	ERSKINE	8	708	TOWER-SOUDAN
1	599	FERTILE-BELTRAMI	6	709	DULUTH
1	600	FISHER	8	710	ST. LOUIS COUNTY
2	601	FOSSTON	8	712	MT.IRON-BUHL
1	603	MC INTOSH	2	716	BELLE PLAINE
4	604	MENTOR	2	717	JORDAN
1	611	CYRUS	6	719	PRIOR LAKE
2	612	GLENWOOD	6	720	SHAKOPEE
2	614	STARBUCK	2	721	NEW PRAGUE
2	615	VILLARD	7	726	BECKER
6	621	MOUNDS VIEW	3	727	BIG LAKE
6	622	NORTH ST. PAUL-MAPLE	3	728	ELK RIVER
6	623	ROSEVILLE	1	731	ARLINGTON
6	624	WHITE BEAR LAKE	1	732	GAYLORD
6	625	ST. PAUL	1	733	GIBBON
1	627	OKLEE	1	734	HENDERSON
1	628	PLUMMER	1	735	WINTHROP
1	630	RED LAKE FALLS	1	736	BELGRADE
			1	737	BROOTEN

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APPENDIX 2
(CONTINUED)

CLUSTER	SCHOOL DISTRICT	
2	738	HOLDINGFORD
2	739	KIMBALL
2	740	MELROSE
2	741	PAYNESVILLE
6	742	ST. CLOUD
2	743	SAUK CENTRE
2	745	ALBANY
6	748	SARTELL
3	750	COLD SPRING
1	756	BLOOMING PRAIRIE
3	761	OWATONNA
1	762	ELLENDALE-GENEVA
1	763	MEDFORD
1	768	HANCOCK
2	769	MORRIS
1	771	CHOKIO-ALBERTA
1	775	KERKHOVEN-MURDOCK-SU
1	777	BENSON
1	784	APPLETON
1	786	BERTHA-HEWITT
2	787	BROWERVILLE
2	789	CLARISSA
1	790	EAGLE BEND
4	791	GREY EAGLE
2	792	LONG PRAIRIE
2	793	STAPLES
2	801	BROWNS VALLEY
1	803	WHEATON
1	806	ELGIN-MILLVILLE
2	809	MAZEPPA
2	810	PLAINVIEW
3	811	WABASHA
2	813	LAKE CITY
1	818	VERNDALE
3	819	WADENA
1	820	SEBEKA
2	821	MENAHGA
1	827	NEW RICHLAND-HARTLAN
2	829	WASECA
2	830	JANESVILLE
6	831	FOREST LAKE
6	832	MAHTOMEDI
6	833	SOUTH WASHINGTON COU
6	834	STILLWATER
1	836	BUTTERFIELD
1	837	MADELIA
1	840	ST. JAMES
1	846	BRECKENRIDGE
1	850	ROTHSAY
1	852	CAMPBELL-TINTAH
1	857	LEWISTON
2	858	ST. CHARLES
3	861	WINONA
4	876	ANNANDALE
3	877	BUFFALO
3	879	DELANO
2	880	HOWARD LAKE-WAVERLY
3	881	MAPLE LAKE
7	882	MONTICELLO
3	883	ROCKFORD
3	885	ST. MICHAEL-ALBERTVI
1	891	CANBY
1	892	CLARKFIELD
1	893	ECHO
2	894	GRANITE FALLS
1	896	WOOD LAKE
3	911	CAMBRIDGE
2	912	MILACA
1	913	WALDORF-PEMBERTON
1	914	ULEN-HITTERDAL
1	918	CHANDLER-LAKE WILSON
6	991	MINNEAPOLIS
2	993	FRANCONIA
6	996	SOUTH ST. PAUL
1	998	PRINSBURG

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